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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/936,040	12/11/2001	Ichio Yudasaka	110554	7811

7590

01/23/2003

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Alexandria, VA 22320

EXAMINER

SEFER, AHMED N

ART UNIT

PAPER NUMBER

2826

DATE MAILED: 01/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/936,040

Applicant(s)

YUDASAKA ET AL.

Examiner

A. Sefer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 14 November 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) 8-12 and 18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7, 13-17 and 19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other:

**DETAILED ACTION**

***Response to Amendment***

1. The amendment filed on 11/14/02 has been entered and claim 19 has been added.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

- (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
- (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

3. Claim 1-7 and 13-17 are rejected under 35 U.S.C. 102(e) as being anticipated by Akimoto US Patent No. 6,480,179.

Akimoto discloses in figs. 1-9 a thin film transistor or a display device having thin film transistor (as in claim 17) comprising a gate electrode 31 having a gate insulation film 32; channel regions that extend through the gate insulation film in the gate electrode; and a source drain regions 33, 36 connected to said channel regions that are formed against a semiconductor film that is formed on the surface of an insulation substrate (not shown), wherein recombination centers 35 which capture carriers are formed in said channel regions by part of crystal semiconductor film having

a relatively low degree of crystallization among crystal semiconductor films that form said channel regions.

As to claims 2 and 3, Akimoto discloses recombination centers concentrated adjacent to said drain regions within said channel regions or concentrated in a region, among channel regions, whose distance from the drain regions falls within  $1/3$  to  $1/10$  of a channel length (as in claim 3).

As to claim 4, 5 and 13-16 Akimoto discloses in fig. 7 among channel regions, in which said recombination centers are concentrated have different thickness (as in claims 4, 13 and 14) or surface positions (as in claims 5, 15 and 16) compared to other regions.

As to claims 6 and 7, Akimoto discloses regions among said channel regions in which said recombination centers are concentrated have different surface height positions compared to other regions due to a different thickness or due to indented sections (as in claim 7) in a lower layer of the semiconductor films forming said channel regions.

4. Claim 19 is rejected under 35 U.S.C. 102(e) as being anticipated by Akimoto US Patent No. 6,480,179.

Akimoto discloses in figs. 1-9 a thin film transistor, comprising a channel region facing a gate electrode 61 through a gate insulating film 62, the channel region having a partially distorted portion distorted in a thickness direction of the channel region; source and drain regions 63, 66 connection to the channel region in a semiconductor film in contact with a surface of an insulating substrate (not shown); a recombination center

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formed around the partially distorted portion, the recombination center having a relatively low degree of crystallization among crystal semiconductor films forming the channel region.

### ***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Yamazaki et al. US ref. 5,821,563 disclose a thin film device free from reverse leakage.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to A. Sefer whose telephone number is (703) 605-1227.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan J Flynn can be reached on (703) 308-6601.

ANS

January 21, 2003

NATHAN J. FLYNN  
SUPERVISORY PATENT EXAMINER  
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